

REMARKS

By the present Amendment, the specification is amended and claims 16 and 24 are cancelled. This leaves claims 11-15, 17-23 and 25 pending in the application, with claims 11 and 19 being independent.

Since these amendments address objections raised for the first time in the final rejection and do not raise new issues requiring further search or consideration, such amendments should be entered at this time to place the application in condition for allowance or in better form for appeal.

Objection Under 35 U.S.C. §132(a)

The specification is objected to under 35 U.S.C. §132(a) as allegedly containing new matter in referring to an "automatic clutch" on page 7, lines 19-20, of the substitute specification. This objection is obviated by deletion of "automatic clutch" from the substitute specification, without admitting that the term constitutes "new matter".

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 11-18 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Relative to claim 11, the reference to "output part" appears to be questioned. Such part refers to the driven part 54 described in the original and substitute specifications. This objection is avoided by adding "output part" to page 7 of the substitute specification.

Claims 16 and 24 are deleted, without admission, rendering the rejection of these claims moot.

Thus, the pending claims are formal and comply with 35 U.S.C. § 112.

Rejections Under 35 U.S.C. §103

New independent claim 11 covers a filter device comprising a filter housing 10 with an unfiltered fluid inlet 20, a filtered fluid outlet 22 and a backwash fluid outlet 26. Filter elements 28 are in the housing receiving fluid flow in one direction for filtration and in an opposite direction for backwashing effective filter surfaces. A pivoting device 30 mounts the filter elements in the filter housing for sequential rotational movement about a pivot axis between filtration positions in which unfiltered fluid flows from the inside to outside through the filter elements and a backwashing position in which filtered fluid flows from the outside to inside through the filter elements. The pivot device has a rotatably mounted receiving part 32 mounting the fluid elements parallel to the pivot axis along a path coaxial to the pivot axis and has first and second end parts 40, 38. The filter elements extend between the end parts. The first end part 40 faces toward the fluid inlet and is rotatably guided along inside of the filter housing by a seal 42. A drive 34 is coupled to receiving part 32 to rotate the receiving part, includes a rod-shaped drive part 52 releasably connecting the first and second end parts and includes a pneumatic motor 34 producing alternating to and fro movements on an output part convertible into a constant drive movement in a drive direction of the drive part by a free wheel device 56.

By forming the filter device in this manner, the filter device can be more effectively sealed, can operate more efficiently, particularly for backwashing and requires only a relatively small installation space. These advantages are particularly enhanced by the flow through the filter for filtration being from the inside out and for the backwashing flow being from the outside in such that the pressure of the filtered fluid can be used as the backwashing fluid and such that no additional backwashing fluid need be supplied.

Claims 11, 12, 14, 15, 17 and 18 stand rejected under 35 U.S.C. §103 as being unpatentable over EP Publication No. 09/00548 to Sindorf. The Sindorf publication is alleged to have all of the structure recited in claim 11, except for the reverse flow through the filter device which reverse flow is alleged to be obvious.

However, nothing supports this contention of obviousness. Particularly, the claimed structure provides the reverse flow allowing use of the filtered fluid for the backwashing fluid rather than a separate fluid as in the Sindorf device so that more than a mere reversal of parts is involved in the proposed modification. Thus, this reversal is not obvious, as alleged, and involves structural differences (particularly the backwash position with the filter elements necessarily exposed to the filtered fluid in the housing for the recited flow), rather than a mere difference in the apparatus contents during operation.

Additionally, claim 11 requires a drive part releasably connecting the end parts of the pivoting device. Relative to this separable or releasable connection, the statement of the Examiner refers to separable connection between the Sindorf filter housing 1 and its base section 2. However, that releasable connection is not part of a drive part connecting the ends of a pivoting device as claimed.

Specifically, the Sindorf patent discloses an arrangement in which filtration of the fluid to be filtered entering through inlet 5 passes through the filter elements 12 from the outside to the inside, as shown by the right-hand filter in Fig. 1 and the three right most filter elements in Fig. 4. The filtered fluid then passes through the interior of the filter element, and is conveyed out outlet 6. The filter element shown in the left-hand side of Figs. 1 and 4 is being backwashed by compressed air being forced upwardly through the interior of the filter element causing the debris

on the outside of the filter to be discharged through passage opening 25 and out mud drain valve 34, 37. A pneumatic motor formed by a rotary drive 4 is coupled to a clutch plate 13 with kant set 16 and clutch opening 15 with the drive also including a bearing ring 14.

The Sindorf drive arrangement does not rotate a receiving part holding the filter element where the drive includes a rod-shaped drive part releasably connecting the first and second end parts and with a free wheel device. The longitudinal axis 10 referenced is not part of the Sindorf drive and does not provide a releasable connection.

Moreover, as noted above, the filtering and backwash flow through the Sindorf filter elements 12, as indicated by the Sindorf structure, is opposite to that provided by the claimed structure, and a separate fluid (compressed air) is used for backwashing, not filtered fluid from the filter elements, as provided by the claimed structure.

Claim 11 is also distinguished by the first end part facing the inlet and rotatably guided from the inside surface of the filter housing by a seal. The Sindorf header 3 and footer 2, alleged to correspond to the claimed end parts, do not have one thereof (particularly bearing surface 20) facing its unfiltered fluid inlet 5 and do not have the filter element extending between them. No such arrangement is disclosed or rendered obvious by the Sindorf patent.

Thus, the subject matter of claim 11 is not anticipated or rendered obvious by the Sindorf patent. None of the other cited patents cure these deficiencies in the Sindorf patent.

Independent claim 19 covers a filter device comprising a filter housing 10 having an unfiltered fluid inlet 20, a filtered outlet 22 and a backwash filter outlet 26. Filter elements 18 are in the filter housing receiving fluid flow in one direction for filtration and in an opposite direction for backwashing effective filter surfaces. A pivoting device 30 mounts the filter

elements in the filter housing for sequential rotational movement about a pivot axis between filtration positions in which unfiltered fluid flows from inside to outside through the filter elements and a backwashing position in which the filtered fluid flows from outside to inside through the filter elements. The pivot axis has a rotatably mounted receiving part 32 mounting the filter elements parallel to the filter axis along a path coaxial to the pivot axis and having first and second end parts 40, 38. The filter elements extend between the end parts. The first end part 40 faces toward the fluid inlet and is rotatably guided along an inside of the filter having the seal 42. A drive 34 is coupled to the receiving part to rotate the receiving part. A lower part of the filter housing has an arcuate-shaped recess over which several of the filter elements can be located simultaneously in the filter position with their lower open cross sections in fluid communication with that arcuate-shaped recess, and has a backwash recess over with the filter elements are sequentially located in the backwashing position with the free open cross sections in fluid communication with it. The arcuate-shaped recess is in fluid communication with the fluid inlet. The backwash recess is in fluid communication with the backwash fluid outlet.

In addition to certain advantages discussed above relative to claim 11, claim 19 is further distinguishable by the Sindorf patent by the claimed arcuate-shaped recess by which the fluid inlet is in fluid communication with the inside of the filter elements in the filtration positions simultaneously. In contrast, no arcuate-shaped recess is provided in the Sindorf system in which, as best illustrated in Fig. 4, the inlet 5 passes fluid from the lateral and outside surfaces of the filter elements 11. The Sindorf openings 18 in plate 17 consist "of threaded bores on a common reference circle" (page 9, paragraph 0014, line 3 of USPTO translation), and thus, are not

arcuate. Also, Sindorf openings 18 communicate with outlet 6, not inlet 5, contrary to the claimed structure.

Claims 12-15 and 17-18 and claims 20-23 and 25, being dependent upon claims 11 and 19, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents.

Claims 12 and 20 are further distinguishable by the free wheel device having a free wheel sleeve delivering power in one direction up to a set torque and not applying drive torque in an opposite direction. Such arrangement is not shown to be disclosed or rendered obvious by the Sindorf patent. No evidence of the alleged "known technique...to improve similar devices..." is provided. Such unsupported allegations of obviousness are improper.

Claims 13 and 21 are further distinguishable by the filter elements being conical and arranged in pairs where the filter elements of each pair being diametrically opposite one another within the overall claimed combination.

Claims 14 and 22 are further distinguishable by the second housing part having a cavity with an axial extension corresponding to the overall length of each filter element and being above the filter elements. No such cavity is disclosed or rendered obvious by the Sindorf patent.

Claims 15 and 23 are further distinguishable by the fluid inlet and the backwash fluid outlet being located in a first part of the housing extending between the filtered fluid outlet and the drive. Such orientation is not disclosed or rendered obvious, particularly since the Sindorf drive is located at the top of the filter housing remote from the fluid inlet 5 and the backwash outlet 8. Thus, the Sindorf fluid inlet 5 and backwash outlet 8 are not between its outlet 6 and drive 4.

Claim 17 is further distinguishable by the arcuate-shaped recess for the reasons discussed above relative to claim 19. Sindorf threaded bores 18 on a common circle do not provide the claimed arcuate recess.

Claims 18 and 25 are further distinguishable by the exterior surfaces of filter elements being in fluid communication to allow filtered fluid to be used as backwashing fluid. In the Sindorf device, the exterior of the filter element in the backwashing position is isolated from and is not in fluid communication with the exteriors of the other filter elements.

In view of the foregoing, claims 11-15, 17-23 and 25 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,



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